

OCT 15 2002

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
1645

Applicants:

Leonard I. Zon and Sadhana Agarwal

OCT 18 2002

Application No.: 10/051,452

Group Art Unit:

1645

TECH CENTER 1600/2900

Filed: January 18, 2002

Examiner:

Not Yet Assigned

Confirmation No.: 6986

For: EXPRESSION CLONING USING A TAGGED cDNA LIBRARY

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202

on 10-11-02

Signature

Dawn M. Myers

Dawn M. Myers

Typed or printed name of person signing certificate

TRANSMITTAL OF SMALL ENTITY STATEMENTS

Assistant Commissioner for Patents  
P.O. Box 2327  
Arlington, VA 22202

Sir:

Please file the two enclosed Small Entity Statements in the above-identified patent application.

A copy of this letter is enclosed for accounting purposes.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Doreen M. Hogle

Doreen M. Hogle

Registration No. 36,361

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: October 11, 2002

OCT 15 2002

STATEMENT CLAIMING SMALL ENTITY STATUS  
37 CFR 1.27(a)-NONPROFIT ORGANIZATION

DOCKET NUMBER: 1242.1031-003

Applicant or Patentee: Leonard I. Zon and Sadhana Agarwal

Application or Patent No.: 10/051,452

Filed or Issued: January 18, 2002

Title: Expression Cloning Using a Tagged cDNA Library

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OCT 18 2002

I hereby state that I am an official empowered to act on behalf of the nonprofit organization identified below:

NAME OF NONPROFIT ORGANIZATION Howard Hughes Medical Institute

ADDRESS OF NONPROFIT ORGANIZATION 4000 Jones Bridge Road  
Chevy Chase, Maryland

TECH CENTER 1600/290

TYPE OF NONPROFIT ORGANIZATION:

UNIVERSITY OR OTHER INSTITUTION OF HIGHER EDUCATION  
 TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 U.S.C.501(a) and 501(c)(3))  
 NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)  
 WOULD QUALIFY AS TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 U.S.C. 501(a) and 501(c)(3)) IF LOCATED IN THE UNITED STATES OF AMERICA  
 WOULD QUALIFY AS NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA IF LOCATED IN THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)

I hereby state that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.27(a)(3) for purposes of paying reduced fees to the United States Patent and Trademark Office regarding the invention described in:

the specification filed herewith with title as listed above.  
 the application identified above.  
 the patent identified above.

I hereby state that the rights under contract or law have been conveyed to and remain with the nonprofit organization regarding the above identified invention. If the rights held by the nonprofit organization are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities. No rights to the invention are held by any person who would not qualify as a person under 37 CFR 1.27(a)(1) or by any concern which would not qualify as a small business concern under 37 CFR 1.27(a)(2) or a nonprofit organization under 37 CFR 1.27(a)(3).

Each person, concern, or organization having any rights in the invention is listed below:

no such person, concern, or organization exists.  
 each such person, concern, or organization is listed below.

Children's Medical Center Corporation  
300 Longwood Avenue  
Boston, Massachusetts 02115

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.27(g)(2))

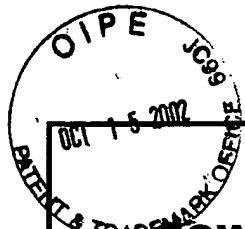
NAME OF PERSON SIGNING David A. Clayton

TITLE IN ORGANIZATION OF PERSON SIGNING Vice President and Chief Scientific Officer

ADDRESS OF PERSON SIGNING Howard Hughes Medical Institute, 4000 Jones Bridge Road, Chevy Chase, Maryland 20815

SIGNATURE David A. Clayton DATE 8-22-02

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.



**POWER OF ATTORNEY OR  
AUTHORIZATION OF AGENT AND  
CORRESPONDENCE ADDRESS**

<i>Application Number</i>	10/051,452
<i>Filing Date</i>	January 18, 2002
<i>First Named Inventor</i>	Leonard I. Zon
<i>Group Art Unit</i>	1645
<i>Examiner Name</i>	Not assigned
<i>Attorney Docket Number</i>	1242.1031-003

TECH CENTER 1600/2900  
OCT 18 2002

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I/We hereby appoint

the attorneys/agents associated with Customer No. 021005  
 Practitioner(s) named below:

as my/our attorneys/agents to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

The correspondence address for the above-identified application is:

Customer Number 021005  
 Hamilton, Brook, Smith & Reynolds, P.C.  
 530 Virginia Road  
 P.O. Box 9133  
 Concord, Massachusetts 01742-9133

Other \_\_\_\_\_

Please direct all telephone calls and facsimiles to:

Name Doreen M. Hogle, Esq. Tel. No. 978-341-0036 Fax No. 978-341-0136

I am the:

Applicant/Inventor.  
 Authorized representative of the Assignee of the entire interest. See 37 C.F.R. 3.71. A Statement under 37 C.F.R. §3.73(b) is enclosed.  
 Authorized representative of an assignee together with [ ] of the entire interest. A separate Statement under 37 C.F.R. § 3.73(b) is enclosed.

**SIGNATURE of Applicant or Assignee of Record**

Name Donald P. Lombardi

Signature Donald P. Lombardi

Date 8/30/02

Total of 1 form is submitted.



Docket No. 1242.1031-003

STATEMENT UNDER 37 C.F.R. § 3.73(b)

**RECEIVED**

Applicants: Leonard I. Zon and Sadhana Argarwal

OCT 18 2002

Application No.: 10/051,452 Filed: January 18, 2002

For: Expression Cloning Using a Tagged cDNA Library

TECH CENTER 1600/2900

Children's Medical Center Corporation, a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is

- A.  the assignee of the entire right, title and interest in the patent application identified above; or
- B.  an assignee together with [ ] of the entire right, title and interest in the patent application identified above. A separate Statement under 37 CFR § 3.73(b) is being submitted.

The right, title and interest of the above-named assignee in the patent application identified above is established by virtue of:

A. [ ] An assignment from the inventors of the patent application identified above, a copy thereof is attached.

OR

B. [X] A chain of title from the inventor(s) of the patent application identified above, to the current assignee as shown below:

1. From: Leonard I. Zon To: Howard Hughes Medical Institute  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.
2. From: Sadhana Argarwal To: Howard Hughes Medical Institute  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.
3. From: Howard Hughes Medical Institute To: Leonard I. Zon (Appointment of Investigator as Agent)  
The document was recorded in the Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.

Additional documents in the chain of title are listed on a supplemental sheet.

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Date: 8/30/02

Name: Donald P. Lombardi

Title: Chief Intellectual Property Officer

Signature: Donald P. Lombardi

STATEMENT UNDER 37 C.F.R. § 3.73(b)

4. From: Leonard I. Zon (signing for both himself and as agent of Howard Hughes Medical Institute)  
To: Children's Medical Center Corporation.  
The document was recorded in the Patent and Trademark Office at  
Reel       , Frame       , or a copy thereof is attached.

ASSIGNMENT

Assignment made March 25, 2002 by Leonard I. Zon, MD ("Inventor") to the Howard Hughes Medical Institute, a Delaware corporation (the "Institute").

Recitals

WHEREAS, Inventor is an employee of the Institute and, as a condition of his employment, has signed the Agreement appended to the Institute's Policy on Intellectual Property (the "Intellectual Property Agreement");

WHEREAS, pursuant to the Intellectual Property Agreement, Inventor has agreed (a) to assign to the Institute all rights he may acquire in any invention, discovery, improvement, or other intellectual property, whether or not patentable or copyrightable, developed directly or indirectly as a result of a program of research financed by Institute funds or funds under the control of the Institute (each a "Subject Property") and (b) to execute any agreements that may be desired by the Institute in connection with such assignment;

WHEREAS, Inventor has, alone or with others invented "A Novel Expression Cloning Methodology to Isolate Components of Biochemical Signaling Pathways Using A Tagged cDNA Library in Mammalian Cells" which may be the subject of a patent application (the "Invention"), and the Invention is a Subject Property; and

WHEREAS, Inventor seeks to make a formal assignment of his interest in the Invention to the Institute, and the Institute desires the execution of a formal assignment of all of Inventor's right, title, and interest in the Invention.

NOW, THEREFORE, in consideration of the promises contained in and the acts performed and to be performed pursuant to the Intellectual Property Agreement and of other good and valuable consideration, the receipt of which is hereby acknowledged by Inventor, Inventor agrees as follows:

1. Assignment. Inventor hereby assigns to the Institute his entire right, title, and interest in the Invention: any United States patent applications and all corresponding foreign patent applications which are directed to the Invention (including, without limitation, the patent application entitled "Expression Cloning Using a Tagged cDNA Library" filed in the United States Patent and Trademark Office on January 18, 2002 with Serial Number 10/051452), and any and all patents issued therefrom; all United States or foreign division and continuation applications based on any of the foregoing, and any and all patents issued therefrom; and all claims which are directed to the Invention and which may be contained in continuation-in-part applications or in patents which issue therefrom.

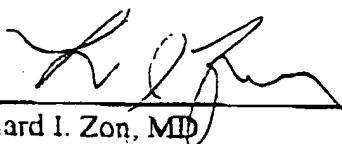
2. Cooperation. Inventor agrees to execute upon request such further assignments, documents, and other instruments as may be necessary or desirable to assign Inventor's entire right, title and interest in the Invention to the Institute and to assist the Institute (or others at the direction of the Institute) in applying for, obtaining, and enforcing patents,

copyrights, or other rights in the United States and in any foreign country with respect to the Invention.

3. Parties. The terms and provisions of the Assignment shall inure to the benefit of the Institute and its successors and assigns and shall be binding on the Inventor and his heirs, personal representatives and assigns.

4. Warranty. Inventor warrants and represents that he has not entered into any assignment, contract, or understanding in conflict herewith, and that there is no other person or entity whose consent is required in order for the Inventor to make the assignment contained herein.

Inventor:

  
Leonard I. Zon, MD

Commonwealth of Massachusetts

County of Suffolk

Then personally appeared before me the above-named Leonard I. Zon, MD and acknowledged that he executed the foregoing instrument in his authorized capacity this 25<sup>th</sup> day of May, 2002.

(SEAL)

Notary Public:



Joyce L. Patterson  
(print name)

My Commission Expires: June 27, 2008

CMCC 698  
HHMI-01454

ASSIGNMENT

Assignment made March 18, 2002 by Sadhana Agarwal, PhD ("Inventor") to the Howard Hughes Medical Institute, a Delaware corporation (the "Institute").

Recitals

WHEREAS, Inventor is an employee of the Institute and, as a condition of her employment, has signed the Agreement appended to the Institute's Policy on Intellectual Property (the "Intellectual Property Agreement");

WHEREAS, pursuant to the Intellectual Property Agreement, Inventor has agreed (a) to assign to the Institute all rights she may acquire in any invention, discovery, improvement, or other intellectual property, whether or not patentable or copyrightable, developed directly or indirectly as a result of a program of research financed by Institute funds or funds under the control of the Institute (each a "Subject Property") and (b) to execute any agreements that may be desired by the Institute in connection with such assignment;

WHEREAS, Inventor has, alone or with others invented "A Novel Expression Cloning Methodology to Isolate Components of Biochemical Signaling Pathways Using A Tagged cDNA Library in Mammalian Cells" which may be the subject of a patent application (the "Invention"), and the Invention is a Subject Property; and

WHEREAS, Inventor seeks to make a formal assignment of her interest in the Invention to the Institute, and the Institute desires the execution of a formal assignment of all of Inventor's right, title, and interest in the Invention.

NOW, THEREFORE, in consideration of the promises contained in and the acts performed and to be performed pursuant to the Intellectual Property Agreement and of other good and valuable consideration, the receipt of which is hereby acknowledged by Inventor, Inventor agrees as follows:

1. Assignment. Inventor hereby assigns to the Institute her entire right, title, and interest in the Invention; any United States patent applications and all corresponding foreign patent applications which are directed to the Invention (including, without limitation, the patent application entitled "Expression Cloning Using a Tagged cDNA Library" filed in the United States Patent and Trademark Office on January 18, 2002 with Serial Number 10/051452), and any and all patents issued therefrom; all United States or foreign division and continuation applications based on any of the foregoing, and any and all patents issued therefrom; and all claims which are directed to the Invention and which may be contained in continuation-in-part applications or in patents which issue therefrom.

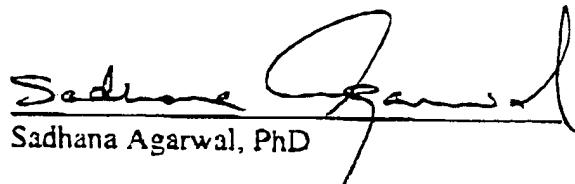
2. Cooperation. Inventor agrees to execute upon request such further assignments, documents, and other instruments as may be necessary or desirable to assign Inventor's entire right, title and interest in the Invention to the Institute and to assist the Institute (or others at the direction of the Institute) in applying for, obtaining, and enforcing patents.

copyrights, or other rights in the United States and in any foreign country with respect to the Invention.

3. Parties. The terms and provisions of the Assignment shall inure to the benefit of the Institute and its successors and assigns and shall be binding on the Inventor and her heirs, personal representatives and assigns.

4. Warranty. Inventor warrants and represents that she has not entered into any assignment, contract, or understanding in conflict herewith, and that there is no other person or entity whose consent is required in order for the Inventor to make the assignment contained herein.

Inventor:

  
Sadhana Agarwal, PhD

Commonwealth of Massachusetts

County of Suffolk

Then personally appeared before me the above-named Sadhana Agarwal, PhD and acknowledged that she executed the foregoing instrument in her authorized capacity this 18<sup>th</sup> day of March, 2002.

(SEAL)

Notary Public:

  
Joyce L. Patterson

(print name)

My Commission Expires: June 27, 2008

CMCC 698  
HHMI 01454

APPOINTMENT OF INVESTIGATOR AS AGENT

Appointment by the Howard Hughes Medical Institute (the "Institute") of Leonard I. Zon, MD, an investigator employed by the Institute, as its agent for the purpose of assigning certain rights to The Children's Medical Center Corporation (the "Center").

WHEREAS, the Institute and the Center collaborate in the active conduct of medical research pursuant to an Agreement between them dated as of January 1, 1987 (the "Agreement");

WHEREAS, pursuant to the Agreement, the Institute has agreed to assign to the Center the Institute's rights with respect to inventions, discoveries, improvements, and other intellectual property, whether patentable or copyrightable (each a "Subject Property"), conceived or reduced to practice in the course of the research program conducted under the Agreement by employees of the Institute;

WHEREAS, research conducted pursuant to the Agreement by Leonard I. Zon, MD while employed by the Institute at the Center has resulted in the invention of a certain Subject Property entitled "A Novel Expression Cloning Methodology to Isolate Components of Biochemical Signaling Pathways Using A Tagged cDNA Library in Mammalian Cells," which is the subject of a patent application entitled "Expression Cloning Using a Tagged cDNA Library" filed in the U.S. Patent and Trademark Office on January 18, 2002 with Serial Number 10/051452, and the Invention is a Subject Property; and

WHEREAS, the Institute wishes Leonard I. Zon, MD to act as its agent for the purpose of assigning to the Center the rights the Institute has in the Invention by reason of the research program conducted at the Center,

NOW THEREFORE, the Institute hereby appoints Leonard I. Zon, MD as its agent for the purpose of assigning the rights the Institute has in the Invention by reason of the research program conducted at the Center to the Center in accordance with and subject to the conditions of the Agreement.

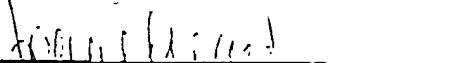
Executed \_\_\_\_\_

HOWARD HUGHES MEDICAL INSTITUTE

By.

  
\_\_\_\_\_  
David A. Clayton, PhD 45-02  
Vice President and Chief Scientific Officer

ATTESTED:

  
\_\_\_\_\_  
Joan S. Leonard, Esq.  
Vice President and General Counsel

Multi-Sole

ASSIGNMENT

WHEREAS, I, **Leonard I. Zon**, together with co-inventor **Sadhana Argarwal**, have invented a certain improvement in **Expression Cloning Using a Tagged cDNA Library**, described in an application for Letters Patent of the United States, the specification of which:

- [ ] is being executed on even date herewith and is about to be filed in the United States Patent Office;
- [X] was filed on **January 18, 2002** as Application No. **10/051,452**;
- [ ] was patented under U.S. Patent No. [ ] on [ ].

WHEREAS, **Children's Medical Center Corporation** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **Commonwealth of Massachusetts** and having a usual place of business at **300 Longwood Avenue, Boston, Massachusetts 02115** desires to acquire an interest therein in accordance with agreements duly entered into with me;

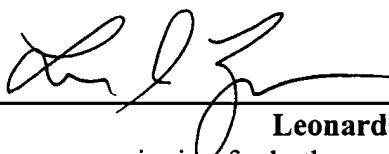
NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, my entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with my entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of my entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal the date set forth below.

Inventor's Signature:



**Leonard I. Zon**

signing for both myself and as agent of  
Howard Hughes Medical Institute

State/Commonwealth

of Massachusetts

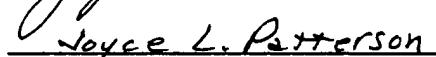
County of Suffolk

Then personally appeared before me the above-named **Leonard I. Zon** and acknowledged that he executed the foregoing instrument as his free act and deed this 13<sup>th</sup> day of August, 2002.

(SEAL)



Joyce L. Patterson Notary Public



Joyce L. Patterson (print name)

My Commission expires 6/27/08